

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method in a computer system of restricting access to memory, the method comprising:

setting a memory location to indicate a trap should occur when the memory location is accessed;

under control of ~~a restricted~~ an unauthorized portion of a computer program,

setting a pointer to point to the memory location, the pointer ~~that~~ indicates that traps to the pointed to memory location are enabled; and

accessing the memory location using the set pointer so that a trap occurs and access to the restricted memory location is detected; and

under control of an ~~unrestricted~~ authorized portion of a computer program,

setting a pointer to point to the memory location, the pointer ~~that~~ indicates that traps to the pointed to memory location are disabled; and

accessing the memory location using the set pointer so that a trap does not occur and access to the restricted memory location is allowed.

2. (Original) The method of claim 1 wherein a user program typically accesses memory locations using pointers with traps enabled.

3. (Original) The method of claim 1 including setting all memory locations of a data structure to indicate a trap should occur when the memory locations are accessed.

4. (Original) The method of claim 1 wherein when the memory location is accessed, invoking a trap handler.

5. (Currently Amended) A system for restricting access to memory, the system comprising:

means for, under control of a computer program, indicating that a trap should occur when a memory location is accessed;

means for, under control of ~~a restricted portion of the computer program,~~
setting a pointer to a memory location wherein the pointer has an indication of trap handling depending on whether an unauthorized or authorized portion of the computer program is accessing the memory location;

means for accessing the memory location; and

means for handling a trap wherein propriety of the access is ~~detected~~ determined based on the indication that the trap should occur when the memory location is accessed and the indication of trap handling in the pointer set to the memory location.

6. (Original) The system of claim 5 wherein the indication of trap handling is enabled.

7. (Original) The system of claim 5 wherein the indication of trap handling is disabled.

8. (Original) The method of claim 5 wherein the propriety is unauthorized.

9. (Original) The method of claim 5 wherein the propriety is authorized.

10. (Currently Amended) A computer-readable medium for restricting access to memory, comprising:

a data structure with a plurality of elements;

a pointer to an element in the data structure, the pointer having ~~an~~ a first indication of whether a trap is enabled depending on whether ~~a restricted~~ an unauthorized or ~~unrestricted~~ authorized portion of a computer program is accessing the data structure;

for each element, ~~an~~ a second indication of whether a trap is enabled, the second indication being distinct from the first indication; and

a handler including instructions for handling the enabled trap.

11. (Original) The computer-readable medium of claim 10 wherein the indication for an element is enabled.

12. (Original) The computer-readable medium of claim 10 wherein the handler is invoked when the element in the data structure is accessed through a pointer whose indication is enabled.

13. (Original) The computer-readable medium of claim 10 wherein the handler is not invoked when the element in the data structure is accessed through a pointer whose indication is disabled.

14. (Original) The computer-readable medium of claim 13 wherein the indication for an element is disabled.

15. (Original) The computer-readable medium of claim 13 wherein the handler is invoked when the element in the data structure is accessed through a pointer whose indication is enabled.

16. (Currently Amended) A system for restricting access to memory comprising:
a component that sets a memory location to indicate a trap should occur when the memory location is accessed;
a component that, under control of ~~a restricted~~ an unauthorized portion of a computer program,
sets a pointer to point to the memory location, the pointer ~~that~~ indicates that traps to the pointed to memory location are enabled; and
accesses the memory location using the set pointer so that a trap occurs and access to the restricted memory location is detected; and
a component that, under control of an ~~unrestricted~~ authorized portion of a computer program,
sets a pointer to point to the memory location, the pointer ~~that~~ indicates that traps to the pointed to memory location are disabled; and
accesses the memory location using the set pointer so that a trap does not occur and access to the restricted memory location is allowed.
17. (Original) The system of claim 16 wherein a user program typically accesses memory locations using pointers with traps enabled.
18. (Original) The system of claim 16 including a component that sets all memory locations of a data structure to indicate a trap should occur when the memory locations are accessed.
19. (Original) The system of claim 16 wherein when the memory location is accessed, a trap handler is invoked.